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KEISER,H.W. Pennsylvania Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION
KANE,W.F. Region 1, Ofc of the Director

SUBJECT: Updates response to Enforcement Conference 88-226 re inoperability of four main steam tunnel Delta-T modules.

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JUL 24 1989

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SUSQUEHANNA STEAM ELECTRIC STATION
STATUS/REVISION TO MAIN STEAM TUNNEL
DELTA T ACTIONS
PLA-3214 FILES R41-1C, R41-2

Docket Nos. 50-387
and 50-388

Dear Mr. Kane:

Pennsylvania Power and Light's (PP&L) response to the NRC Enforcement Conference 88-226 (PLA-3105 dated 10/31/88) concerning inoperability of the four Main Steam Tunnel Delta-T modules included those actions being evaluated or undertaken to prevent recurrence of this type event. This letter is being submitted to update NRC on these items and also serves as notification of a revision to the completion schedule for some of the items.

The following provides the status of PP&L actions identified in section (3) of our response to the Notice of Violation.

3a - Task team established to investigate delta-T instrumentation.

Status: The task team has completed its investigation as stated in our response. This investigation identified additional concerns with the analytical thermal modeling of the reactor building which have been incorporated into PP&L's activities to resolve this issue. This increased work scope has delayed the completion of several activities specified in our initial response.

3b - Complete a design basis analysis to assure steam leak detection setpoints are correct; and revise setpoints, if necessary.

Status: As noted in 3a above, activities associated with this issue are ongoing. We have completed development of the new Compartment Transient Temperature Analysis (COTTAP) program for thermal modeling of the ECCS rooms under steam leak conditions, and have applied this to the HPCI area. Some initial work has also been done in the Steam Tunnel area.

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These calculations show that temperature increases resulting from steam leaks of 5 gpm may not be differentiable, in reasonable time frames, from thermal increases caused by other plant evolutions. Therefore, reductions of the existing setpoints to ensure trips in reasonable time frames would result in a higher probability of undesired isolations due to abnormal but not unexpected temperature perturbations.

Calculations completed to date using 25 gpm leakage rates show that the present setpoints for steam line isolation are satisfactory, thus ensuring the required function of leak detection and isolation in reasonable time frames. PP&L will provide a report by August 31, 1989, of the results of the HPCI area calculations, and further basis for revision of the leakage rate isolation setpoint. The acceptability of a higher design bases leakage value has been reviewed with the NSSS vendor for Susquehanna. They have verified the acceptability of higher leakage bases.

Currently, PP&L is performing thermal calculations using 5 gpm and 25 gpm leakage rates for each room requiring steam leak detection and isolation. Based upon the progress of the HPCI area thermal modeling, we expect that all existing setpoints will provide adequate and prompt isolation of 25 gpm leaks. Calculations for all rooms will be completed by March 31, 1990.

3c - Assess the location of leak detection temperature sensors in ducts.

Status: This action has been completed. The assessment identified temperature relocations that were required for proper system functioning. These relocations have been completed. Additional changes for greater system reliability in the long term have also been identified. These modifications will be scheduled for future refueling outages.

3d - Develop additional design information with regard to installation instructions for temperature sensors in rooms and ducts.

Status: Engineering personnel who develop design change packages (DCP's) are required to supply an adequate level of installation instructions to assure proper field installation. These requirements combined with PP&L's present configuration control program, results in a substantially greater degree of installation detail in present modification packages than was common during the construction stage of the plant. The DCP's developed to relocate the temperature elements identified in item 3c contained detailed installation instructions for those sensor relocations. Additionally, design personnel developing DCP's for sensor installations in rooms and ducts have been instructed on the importance of providing detailed installation instructions in the DCP.

3e - Perform an evaluation to determine if delta-T instrumentation is needed as a safety feature (issue to be pursued on a generic basis with BWR Owner's Group).

Status: In addition to working with the BWROG, PP&L is independently pursuing the issue. We will complete these evaluations in conjunction with the analyses described in 3b.

3f - Evaluate Operator and I&C questionnaire relative to this event.

Status: This action has been completed. PP&L determined that none of the concerns identified in the questionnaires posed any immediate safety or operational concerns. Issues evolving from this activity are being addressed.

3g - Perform an analysis of plant subsystems versus causal factors identified in this event.

Status: This action has been completed. Although it was determined that several subsystems warranted further investigation, PP&L concluded that there were no immediate safety or operational concerns. Issues evolving from this activity are being addressed.

3h - The main steam tunnel delta-T temperature sensor on Unit 2 will be relocated to be consistent with Unit 1 prior to the end of the Unit 2 third refueling and inspection outage.

Status: The modification package has been released to the plant. It is scheduled to be installed during the Unit 2 third refueling and inspection outage, scheduled to end November 23, 1989.

3i - Site engineering responsibilities for steam leak detection will be clearly assigned.

Status: This item is completed.

3j - Normal values will be assigned for all steam leak detection system temperature based trip channels.

Status: The calculations for these normal values will be completed in conjunction with the calculations for the steam leak conditions temperatures. The schedule for completion of this work is identified in item 3b.

3k - Reevaluate the need to record actual readings during channel checks.

Status: This reevaluation is in progress and will be completed by August 15, 1989.

The Susquehanna Senior Resident Inspector will be fully briefed on the status of the items identified in this letter.

Please contact R.D. Kichline (215-770-4181) if there are questions concerning this response.

Very truly yours,

H. W. Keiser

Attachment

cc: NRC Document Control Desk (original)
NRC Region I
Mr. G. S. Barber, NRC Senior Resident Inspector
Mr. M. C. Thadani, NRC Project Manager